NOTICE

All drawings located at the end of the document.

THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES:

VOLUME I: FIELD OPERATIONS (FO)
VOLUME II: GROUNDWATER (GW)
VOLUME III: GEOTECHNICAL (GT)
VOLUME IV: SURFACE WATER (SW)
VOLUME V: ECOLOGY (EE)
VOLUME VI: AIR (AP)

TABLE OF CONTENTS
FOR VOLUME I: FIELD OPERATIONS

EG&G ROCKY FLATS PLANT	Manual:	5-21000-OPS
EMD MANUAL OPERATION SOP	Procedure No.:	FO.10, Rev. 2
	Page:	1 of 19
	Effective Date:	March 1, 1992
Category 2	Organization:	Environmental Management

TITLE:
RECEIVING, LABELING, AND HANDLING ENVIRONMENTAL MATERIALS CONTAINERS

Approved By:
(Name of Approver) MAY 12 1992 (Date)

1.0 TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDIXES

2.0 PURPOSE AND SCOPE

The environmental materials generated from Environmental Management (EM) field activities will be handled in accordance with the Rocky Flats Plant (RFP) waste management program. This standard operating procedure (SOP) describes procedures that will be used by subcontractors at RFP to receive, mark, and handle environmental drums until they are returned to RFP's representative, EG&G.

These procedures are intended to be sufficiently detailed so that conformance with them will result in reliable drum handling and management.

3.0 RESPONSIBILITIES AND QUALIFICATIONS

Personnel using light or heavy equipment, scientific monitoring devices, or operating company vehicles must have appropriate training and/or licenses.

The subcontractor's site manager is responsible for the proper handling of all materials generated during drilling activities.

The subcontractor is responsible for drumming drill cuttings and other solid materials associated with environmental activities. The transfer of drums to the custody of EG&G Waste Operations personnel shall occur once the drum's contents have been characterized, the drum has been inspected, and space is available at the Waste Operations transfer/storage area.

The subcontractor is also responsible for moving environmental liquids associated with EM drilling activities to holding tanks located at the main EG&G decontamination facility.

It is the subcontractor's site manager's responsibility to report as soon as possible to the EG&G project manager or a designated EG&G representative any damage incurred to a drum. Types of damage include holes, damage to the lid seal, or any other problem that may compromise drum integrity. Damaged drums will have their contents transferred to an undamaged drum.

The subcontractor's site manager will assign personnel to conduct weekly inspections of the drums issued to the subcontractor until relinquished to the custody of EG&G. These inspections will ensure that drum integrity is maintained.

Radiological Engineering-approved subcontractor Health and Safety Specialists are responsible for conducting radiation screenings of equipment, samples, and personnel before they leave potentially contaminated work areas.

EG&G's Waste Operations personnel are responsible for the collection, transport, storage, treatment, and disposal of solid and liquid environmental materials from the drum transfer area at the main decontamination facility.

4.0 REFERENCES

4.1 SOURCE REFERENCES

The following is a list of references reviewed prior to the writing of this procedure:

Hazardous Waste Requirements Manual (HWRM). EG&G. June 1991.

On-site Transportation Manual. EG&G. 1991

Policies: Rocky Flats Plant, Use and Color Coding of Drums. EG&G. RFPM MAT 20-005. November 3, 1989.

A Compendium of Superfund Field Operations Methods. Environmental Protection Agency (EPA). EPA/540/P-87/001. December 1987.

Hall, Ridgway M. Jr., Tom Watson, Jeffrey J. Davidson, David R. Case, Nancy S. Bryson. RCRA Hazardous Wastes Handbook. 6th Edition. Government Institutes, Inc. Rockville, MD. March 1986.

Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), U.S. Coast Guard (USCG), and U.S. Environmental Protection Agency (EPA). October 1985.

4.2 INTERNAL REFERENCES

Related SOPs cross-referenced by this SOP are as follows:

- SOP FO.3, General Equipment Decontamination
- SOP FO.5, Handling of Purge and Development Water
- SOP FO.6, Handling of Personal Protective Equipment
- SOP FO.7, Handling of Decontamination Water and Wash Water
- SOP FO.8, Handling of Drilling Fluids and Cuttings
- SOP FO.9, Handling of Residual Samples
- SOP FO.12, Decontamination Facility Operations
- SOP FO.15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- SOP FO.16, Field Radiological Measurements

5.0 EQUIPMENT

Several types of equipment can be used to move drums too heavy to lift safely. A list of appropriate equipment includes:

- A drum grappler attached to a hydraulic excavator
- A small front-end loader, which can be either loaded manually or equipped with a bucket sling
- A rough terrain forklift
- A roller conveyor equipped with solid rollers
- Drum carts designed specifically for drum handling
- Miscellaneous sizes of wrenches, sockets, and socket ratchets for opening and sealing drums
- Wood pallets
- Plastic or nylon banding

The drum grappler is the preferred equipment for handling heavy drums (NIOSH, et al., 1985).

6.0 WORK AREA CHARACTERIZATIONS

Each project work area will be characterized by EG&G prior to any field activity. Work area characterizations will be based on the historical background of the work area and include the chemical results of previous soil, groundwater, and surface water analyses and the results of field radiological surveys conducted by Radiological Engineering-approved subcontractor Health and Safety Specialists. Work areas associated with the EM program field operations fall into two characterizations: potentially contaminated and not potentially contaminated. Work areas currently characterized as potentially contaminated include the following:

- Individual Hazardous Substance Sites (IHSSs)
- Identified Groundwater Plume Areas
- Americium Zone at OU No. 2
- Protected Areas (PA)

Potentially contaminated work areas where groundwater plumes have been identified will be specified in the applicable Work Plans, as appropriate. Table FO.10-A1 of Appendix FO.10A lists the IHSS work areas at RFP. Figure FO.10-A1, of Appendix A, shows the locations of the RFP IHSSs. Figure FO.10-1 illustrates the identified groundwater plume areas and the americium area at OU No. 2. All other potentially contaminated work areas will be specified in the individual project Work Plans and/or Health and Safety Plans.

Various types of environmental materials are generated during EM field operations. Solid environmental materials for the purpose of EM waste management at the RFP include drill cuttings, sludge, surface soils, and disposable personal protective equipment (PPE). Environmental liquids generated during field activities include drilling fluids, decontamination and wash water, and residual groundwater and surface water samples.

The types of contamination that may be encountered within potentially contaminated work areas include the following:

- Low-level radioactively contaminated substances
- Nonradioactive RCRA-regulated hazardous (hazardous) substances
- Mixed (low-level radioactive and hazardous substances)

The use of field monitors for the detection of volatile organics and radionuclides is discussed in SOPs FO.8, Handling of Drilling Fluids and Cuttings; FO.15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs); and FO.16, Field Radiological Measurements.

Environmental materials generated within work areas characterized as not potentially contaminated and where no verified positive readings were detected on field monitors will be considered uncontaminated and handled as described in the following SOPs:

- SOP FO.5, Handling of Purge and Development Water
- SOP FO.6, Handling of Personal Protective Equipment
- SOP FO.7, Handling of Decontamination Water and Wash Water
- SOP FO.8, Handling of Drilling Fluids and Cuttings
- SOP FO.9, Handling of Residual Samples

7.0 DRUM RECEIVING, LABELING, AND HANDLING PROCEDURES

7.1 RECEIVING

Environmental drums can be obtained by contacting the EG&G project manager. The amount of drums required to perform the work will be specified by the subcontractor. The type of drums required to perform the work will be specified by EG&G Waste Operations. The EG&G project

manager will direct the subcontractor to the appropriate drum distribution area. An advance notice of five days is preferred.

7.1.1 Drum Color Codes

EG&G has segregated drums into a color coding scheme for identification to ensure the proper management of waste (RFPM MAT 20-005). The color code identifies the suspected contaminant characterization of the materials within the drums. The color scheme has been modified to specifically address EM operations. EM drums are gray and contain only environmental materials pending analysis and characterization. The types of EM drums are as follows:

- Gray Drums
  1. Gray, 55-gallon or 30-gallon 17C, open top (removable top) drums will be used for the temporary containment of uncharacterized drill cuttings. These environmental materials are awaiting the results of chemical analyses for contaminant characterization.
  2. Gray, 55-gallon or 30-gallon, closed top drums will be used for moving environmental liquids to the main EG&G decontamination facility and emptied.

Other closable transfer containers, appropriately sized for the volume of water generated by the tasked activity, may also be used for moving environmental liquids associated with drilling activities to the holding tanks at the central decontamination facility.

Uncontaminated disposable PPE and uncontaminated miscellaneous solid environmental materials will be placed in double bagged 3 mil clear plastic bags at the work area. When full, these plastic bags will be labeled and transferred to EG&G's custody at a designated transfer area along with the appropriate COC forms.

7.2 MARKING

EG&G will assign a sequential number for each gray drum received. A two-letter subcontractor ID will follow directly behind the drum ID number. The letter ID will be assigned by EG&G. For example, "1326WC" would identify Drum Number 1326 handled by Woodward-Clyde. Additionally, an identifying marking will be associated with each drum. A Drum Field Log Form (Form FO.10A, see Section 7.0, Documentation) will be used by the subcontractor to track each drum used for containing solid environmental materials until returned to EG&G.

7.2.1 Environmental Liquids

Environmental liquids generated within work areas where drilling activities are being conducted will be characterized as potentially contaminated. These environmental liquids will be placed in gray drums or appropriately sized liquid transfer containers and moved by the subcontractor's personnel. Field personnel should decant the environmental liquids from one drum (or container) to another (or from a trough to a drum or transfer container) if the amount of sludge and sediment within the environmental liquids is substantial. The residual sediment will be contained in gray drums as described in Subsection 6.3.2. The environmental liquids will then be brought to the central EG&G decontamination facility. The decontamination facility will have an area specifically designed to receive environmental liquids. The environmental liquids area will include a decanting process to remove residual sludges and sediments remaining within the liquid. The subcontractor will empty the entire drum's contents into this area. The environmental liquids will be pumped from the decanting area to holding tanks. When a liquid holding tank is full, an EG&G designated subcontractor will take a representative sample from the tank for volatile organic analysis (see SOP FO.12, Decontamination Facility Operations). Environmental liquids must be transported to the 374 evaporator or the granulated activated carbon (GAC) unit within 90 days.

The following marking and handling procedures apply to any containers used for moving environmental liquids:

- In addition to the ID number, the drums or liquid containers will be marked with the words "NONPOTABLE PENDING ANALYSIS."

- A paint stick should be used to apply identifying marks on liquid transfer containers to ensure that the markings will not be washed away during decontamination or precipitation. Paint should not be applied in the vicinity of sampling or field monitoring events to prevent cross-contamination of samples.

- Identifying marks should be legible, approximately 2 inches high, and written on two (opposite) sides and on the top of the container.

- Containers will be placed on a level surface.

- A Radiological Engineering-approved subcontractor Environmental Health and Safety Specialist will do a radiation screening test on the exterior of the container before the container leaves potentially radiologically contaminated work areas. If necessary, the exterior of the container will be decontaminated.

- Environmental liquids container lids will be secured before the containers are moved. Containers will be moved in trucks with enclosed sides and <u>will not</u> be stacked.

- After the container's contents have been emptied, the subcontractor's personnel will decontaminate the container prior to any additional use (see SOP FO.3, General Equipment Decontamination).

- Empty gray drums may be stored by the subcontractor at a designated location in the work area. Drums will be banded to prevent them from blowing away.

- The subcontractor will designate personnel to inspect the integrity of the drums and labeling on a weekly basis. Faded or damaged labeling must be relabeled. Drums will be inspected for damage according to the Hazardous Waste Requirements Manual (HWRM). Types of damage include holes, damage to the lid seal, or any other problem that may compromise drum integrity. The subcontractor will report as soon as possible to the EG&G project manager or a designated EG&G representative any damage incurred to a drum. Damaged drums must have their contents transferred to an undamaged drum. The results of this inspection will be documented on a Drum Inspection Form (Form FO.10B, see Section 7.0-Documentation), dated, and signed by the person performing the inspection.

- Any containers used off site, such as decontamination and wash water containers, must meet DOT specifications for containers, markings, and labeling (see Subsection 6.3.2).

For surface water field activities, wash water and rinse water used in background areas (as designated in the project-specific Work Plans) will be disposed of on the ground at least 50 feet from the sampling location such that the waste water cannot discharge into any stream, pond, or other surface water impoundment.

Wash water used to clean equipment, personnel, or vehicles during surface soil sampling or groundwater sampling in work areas characterized as not potentially contaminated where no verified positive readings were detected on field monitors will be disposed of approximately 50 feet from the sampling location. The disposal location must be at least 200 feet from any stream drainage.

7.2.2 Temporary Containment of Solid Environmental Materials Pending Characterization

Gray drums will be used for the temporary containment of solid environmental materials that are pending characterization including drill cuttings. For 55-gallon drums that will contain drill cuttings, a black rigid liner and round bottomed bag will be placed in the drum and two liters of desiccant will be placed in the bottom of the drum. Two additional liters will be put into the drum when the drum has been half filled. Cuttings will be placed in the drum until the drum is full to approximately 2 inches from the top of the liner. After filling, gray drums will be sealed with a bolt approximately 90° from the drum seam, cleaned if muddy, marked, and placed on pallets. Representative environmental samples from an associated well, boring, or sampling location will be sent to an off site laboratory for a full suite of analytical results to characterize these environmental materials. The drums will remain at the drilling site until a Waste Operations storage area is available. At the time Waste Operations notifies EM that space is available, the drums will be moved to the transfer/storage area to await assessment of the associated environmental samples.

The subcontractor will perform the following steps to ensure the proper handling of the gray drums until transferred to EG&G custody:

- Drums will be checked out from the EG&G drum storage yard with the drum number, subcontractor ID, date and project ID recorded in the drum checkout log.

- In addition to the drum number, the drums will be marked with the words "ENVIRONMENTAL MATERIAL PENDING ASSESSMENT"; the associated well, boring, or sampling number and location; the word "SOIL", the subsurface interval (if soil); and the date the drum was filled. (Soils will not be commingled with miscellaneous environmental materials within a drum.) No PPE is to be drummed.

- A paint stick will be used to apply identifying marks on drums to ensure that the marks will not be washed away during decontamination or precipitation. A paint stick should not be applied in the vicinity of sampling or field monitoring events to prevent cross-contamination of samples.

- Identifying marks should be legible, with characters approximately 2 inches high, and written on two (opposite) sides and on the top of the drum.

- Gray drums will be placed on leveled wood pallets containing a maximum of 3, drums at the drilling site.

- The appropriate information will be documented on the Drum Field Log Form (Form FO.10A).

- Gray drums will be transferred to EG&G's custody at a designated transfer/storage area only after Waste Operations notifies EM personnel that storage is available. The drums should be placed on wood pallets and bound with 1 1/4 inch steel bands at the transfer/storage area.

- A Radiological Engineering-approved subcontractor Health and Safety Specialist will do a radiation screening test on the exterior of the drum before the drum leaves a potentially radiologically contaminated work area. If necessary, the exterior of the drum will be decontaminated.

- Drum lids will be secured with the bolt ring approximately 90° from the seam. Drums will be moved in trucks with enclosed sides.

- A copy of the completed Drum Field Log Form (Form FO.10A) will be given to the receiving EG&G Waste Operations personnel (see Section 7.0, Documentation).
- Drums will be decontaminated and repainted prior to any reuse.
- A new drum number will be applied to the repainted drum.

When the validated chemical analyses from the environmental samples are received by EG&G, Waste Operations will be sent a summary of the results from the EG&G project manager. If the drum's contents are determined to be uncontaminated, the contents will be disposed of in the landfill.

If the drums are determined to contain hazardous substances, mixed substances, or radioactive substances, the gray drums will be painted the appropriate color corresponding to the characterization of the drum's contents and labeled appropriately (See Section 7.3, Labeling, below) by EG&G Waste Operations.

Field monitoring including OVDs and radiation detectors will be used during intrusive activities regardless of the work area characterization. SOP FO.8, Handling of Drilling Fluids and Cuttings describes the use of field monitors for intrusive activities as well as verifying positive readings.

7.3 LABELING

Gray drums containing solid environmental materials that have been characterized as radioactive or mixed will be painted white. If the drum's contents have been characterized as radioactive but not hazardous, the drum will be labeled with a "White I" radioactive label. If the drum's contents have been characterized as mixed, the drum will be labeled with an ORM-E label per HWRM and the On-site Transportation Manual requirements.

Gray drums containing solid environmental materials that have been characterized as hazardous only will be painted white on the ends and black in the center. These drums will be labeled with an ORM-E sticker per HWRM and the On-site Transportation Manual requirements.

8.0 DOCUMENTATION

A permanent record of the implementation of this SOP will be kept by documenting field observations and data. Observations and data will be recorded on drum field log forms. Subcontracting personnel may also choose to document the observations and data in a personal field notebook in addition to the field log forms. If a field book is used, entries should be made with a black waterproof ink pen. The field notebook should be waterproofed and have consecutively numbered pages.

It is recommended that the subcontractor bring duplicate copies of the completed Drum Field Log Form when transferring custody of waste drums to EG&G personnel. Both copies should be signed by the receiving EG&G representative. EG&G Waste Operations will retain one signed copy and the subcontractor will retain the second signed copy in the project files.

Drum forms will be kept in EG&G files in addition to the subcontractor's project files until the project is completed. All project files will be turned over to EG&G at this time (see SOP FO.2, Field Documentation).

8.1 DRUM FIELD LOG FORMS

A Drum Field Log Form will be kept on each drum by the EG&G representative and the subcontractor from the time of issuance until returned to an EG&G representative. An EG&G copy of the drum form will be turned in to the EG&G representative within a week after the drum has been filled. At a minimum, the forms will include the following:

- The name of the subcontractor issued the drum
- The color of the drum
- The identification number with the subcontractor's ID
- The date the drum was issued
- The location of the field activity area
- The contents of the drum (include the subsurface interval if contents are soils from a well or boring)
- The date the drum was filled
- The date the drum was decontaminated or returned to EG&G (include the EG&G facility where the drum was returned to)

Form FO.10A is an example of the Drum Field Log Form to be used. Drum log forms must be checked and updated immediately upon handling. In addition to the drum marking, the Drum Field Log Form will identify the drum and provide a history of the drum. All the field log forms combined will be used to track the movement of environmental materials generated during EM field operations.

8.2 DRUM INSPECTION FORM

The subcontractor is responsible for conducting weekly inspections of all the gray drums they have been issued until the drum is returned to EG&G. Weekly inspections will ensure that the integrity and

labeling of the drums is maintained. The Drum Inspection Form (Form FO.10B) will be used to document these inspections.

8.3 CONTAMINANT CHARACTERIZATION FORM

The Contaminant Characterization Form (Form FO.10C) will be used to document/record the characterization of materials that have been temporarily stored in gray drums until analytical results are received. Upon receipt of all the sample methods for each sample associated with the drum, the subcontractor will submit the drum identification portion of the form along with the analytical results to the EG&G project manager. The drum contents will be characterized by an EG&G representative based on the chemical and radiological analyses and returned to EG&G's Waste Operations personnel. An undated signed copy of the waste characterization form will be turned in with the drum form to the EG&G representative within one week of the drum being filled.

8.4 COMPUTER LOG FORMS

All information found on drum field log forms may be entered into a computer database by designated subcontractor personnel. This will allow the immediate tracking of any environmental drum used by a subcontractor during EM field activities and will provide a backup to the field log forms.

DRUM FIELD LOG FORM

NAME OF THE SUBCONTRACTOR _____

DRUM ID NUMBER WITH SUB. ID _____

DRUM ISSUE DATE _____

LOCATION OF ISSUANCE _____

PROJECT NAME & NUMBER _____

LOCATION OF FIELD ACTIVITY _____

ASSOCIATED WELL, BORING, OR _____

CONTENTS OF DRUM _____

SUBSURFACE INTERVALS (IF SOILS) _____ _____

_____ _____

_____ _____

ASSOCIATED SAMPLE ID NUMBERS _____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

DATE DRUM WAS FILLED _____

SIG. OF PERSON FILLING THE DRUM _____

IF SOLID ENVIRONMENTAL MATERIALS

LOCATION OF TEMP. STORAGE AREA _____

DATE DRUM RETURNED TO EG&G _____

SIG. OF EG&G REPRESENTATIVE _____

IF ENVIRONMENTAL LIQUIDS

DATE & LOCATION WHERE CONTENTS WERE EMPTIED AND DECONNED (e.g. 2/18/91 DECON PAD #___)	DATE	LOCATION

DRUM INSPECTION FORM

DRUM ID NUMBER WITH SUBCONTRACTOR'S ID	STAGING LOCATION	DATE(S)

INSPECTION DATE	DRUM STATUS	INSPECTOR'S SIGNATURE

CONTAMINANT CHARACTERIZATION FORM FOR GRAY DRUMS PENDING CHARACTERIZATION

ATTACH CHEMICAL RESULTS OF ASSOCIATED SAMPLES

THIS PORTION WILL BE COMPLETED BY THE SUBCONTRACTOR

Name of the Subcontractor Issued the Drum .....
The Serialized Drum ID Number with the Subcontractor's ID .....
The Drum Issue Date .....
The Location of the Field Activity Area .....
The Associated Well, Boring, or Sampling Location .....
The Contents of the Drum .....
Subsurface Intervals (Ft), if Soils or Bag Numbers, if PPE ....

The Date the Drum was Filled .....
Matrix of Samples Analyzed .....

ASSOCIATED SAMPLES

Sample No.	Depth (ft)	Sample No.	Depth (ft)	Sample No.	Depth (ft)

Date Submitted to EG&G for Characterization .....
Subcontractor's Representative Signature .....

THIS PORTION WILL BE COMPLETED BY EG&G

The Contaminant Characterization of the Drum's Contents .....
Signature of EG&G Representative Determining the Contaminant Characterization and Date Signed .....
Date
EG&G Holding Facility Where Drum Will be Stored .....

Date and Time Form Returned to Waste Operations ..... Date Time

APPENDIX FO.10A

APPENDIX FO.10A

TABLE FO.10-A1
ROCKY FLATS PLANT
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

REF. NO.	SITE NAME
101	207 SOLAR EVAPORATION PONDS
102	OIL SLUDGE PIT
103	CHEMICAL BURIAL
104	LIQUID DUMPING
105	OUT-OF-SERVICE FUEL TANKS
	105.1 - WESTERNMOST TANK
	105.2 - EASTERNMOST TANK
106	OUTFALL
107	HILLSIDE OIL LEAK
108	TRENCH T-1
109	TRENCH T-2
110	TRENCH T-3
	TRENCHES T-4 TO T-11
	111.1: TRENCH T-4
	111.2: TRENCH T-5
	111.3: TRENCH T-6
	111.4: TRENCH T-7
	111.5: TRENCH T-8
	111.6: TRENCH T-9
	111.7: TRENCH T-10
	111.8: TRENCH T-11
112	903 DRUM STORAGE AREA
113	MOUND AREA
114	PRESENT LANDFILL
115	ORIGINAL LANDFILL
116	MULTIPLE SOLVENT SPILLS
	116.1: WEST LOADING DOCK AREA
	116.2: SOUTH LOADING DOCK AREA

Note: This information is based on the administrative record including the information submitted in the hazardous and low-level mixed waste Part B application dated November 1, 1985, as modified by the subsequent revision dated November 28, 1986, as modified by the subsequent revision dated December 15, 1987, and the transuranic mixed waste Part B application submitted July 1, 1988, Thereafter referred to as the applications. This information is also based on independent review of historical aerial photographs of the facility and independent review of facility submittals.

TABLE FO.10-A1 (cont.)

INDIVIDUAL HAZARDOUS SUBSTANCE SITES

REF. NO.	SITE NAME
117	CHEMICAL STORAGE
	117.1: NORTH SITE
	117.2: MIDDLE SITE
	117.3: SOUTH SITE
118	MULTIPLE SOLVENT SPILLS
	118.1: WEST OF BUILDING 731
	118.2: SOUTH END OF BUILDING 776
119	MULTIPLE SOLVENT SPILLS
	119.1: WEST AREA
	119.2: EAST AREA
120	FIBERGLASSING AREAS
	120.1: NORTH OF BUILDING 664
	120.2: WEST OF BUILDING 664
121	ORIGINAL PROCESS WASTE LINES
122	UNDERGROUND CONCRETE TANK
123	VALVE VAULT 7
	123.1: VALVE VAULT 7
	4,000 GALLON TANK #67
125	HOLDING TANK
126	OUT-OF-SERVICE PROCESS WASTE TANKS
	126.1: WESTERNMOST TANK
	126.2: EASTERNMOST TANK
127	LOW-LEVEL RADIOACTIVE WASTE LEAK
128	OIL BURN PIT NO. *1*
129	OIL LEAK
130	RADIOACTIVE SITE - 800 AREA SITE #1
131	RADIOACTIVE SITE - 700 AREA SITE #1
132	RADIOACTIVE SITE - 700 AREA SITE #4
133	ASH PITS
	133.1:ASH PIT 1-1
	133.2:ASH PIT 1-2
	133.3:ASH PIT 1-3
	133.4:ASH PIT 1-4
	133.5:INCINERATOR
	133.6:CONCRETE WASH PAD
134	LITHIUM METAL DESTRUCTION SITE
135	COOLING TOWER BLOWDOWN

TABLE FO.10-A1 (cont.)
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

REF. NO.	SITE NAME
136	COOLING TOWER PONDS
	136.1 : NORTHEAST CORNER OF BUILDING 460
	136.2 : WEST OF BUILDING 460
	136.3 : S. OF BLDG. 460, W. OF BLDG. 444
137	COOLING TOWER BLOWDOWN - BLDG. 774
138	COOLING TOWER BLOWDOWN - BLDG. 779
139	CAUSTIC/ACID SPILLS
	139.1: HYDROXIDE TANK AREA
	139.2: HYDROFLUORIC ACID TANKS
140	REACTIVE METAL DESTRUCTION SITE
141	SLUDGE DISPERSAL
142	RETENTION PONDS (A,B,C-SERIES)
	142.1: A-1 POND
	METAL DESTRUCTION SITE
141	SLUDGE DISPERSAL
142	RETENTION PONDS (A,B,C-SERIES)
	142.1: A-1 POND
	142.2: A-2 POND
	142.3: A-3 POND
	142.4: A-4 POND
	142.5: B-1 POND
	142.6: B-2 POND
	142.7: B-3 POND
	142.8: B-4 POND
	142.9: B-5 POND
	142.10: C-1 POND
	142.11: C-2 POND
	142.12 NEWLY IDENTIFIED A-5 POND
143	OLD OUTFALL
144	SEWER LINE BREAK
145	SANITARY WASTE LINE LEAK
146	CONCRETE PROCESS WASTE TANKS
	146.1: 7,500 GALLON TANK (#31)
	146.2: 7,500 GALLON TANK (#432)
	146.3: 7,500 GALLON TANK (#34W)
	146.4: 7,500 GALLON TANK (#34E)
	146.5: 3,750 GALLON TANK (#30)
	146.6: 3,750 GALLON TANK (#33)
147	PROCESS WASTE LEAKS
	147.1: MAAS AREA
	147.2: OWEN AREA
148	WASTE SPILLS
149	EFFLUENT PIPE

TABLE FO.10-A1 (cont.)
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

REF. NO.	SITE NAME
150	RADIOACTIVE LIQUID LEAKS (8)
	150.1: NORTH OF BUILDING 771
	150.2: WEST OF BUILDING 771
	150.3: BETWEEN BUILDINGS 771 and 774
	150.4: EAST OF BUILDING 750
	150.5: WEST OF BUILDING 707
	150.6: SOUTH OF BUILDING 779
	150.7: SOUTH OF BUILDING 776
	150.8: NORTHEAST OF BUILDING 770
151	FUEL OIL LEAK
152	FUEL OIL TANK
153	OIL BURN PIT NO. 2
154	PALLET BURN SITE
155	903 LIP AREA
156	RADIOACTIVE SOIL BURIAL
	156.1: BUILDING 334 PARKING LOT
	156.2: SOIL DUMP AREA
157	RADIOACTIVE SITE
	157.1: NORTH AREA
	157.2: SOUTH AREA
158	RADIOACTIVE SITE - BLDG. 551
159	RADIOACTIVE SITE - BLDG. 559
160	RADIOACTIVE SITE - BLDG. 444 PK LOT
161	RADIOACTIVE SITE - BLDG. 664
162	RADIOACTIVE SITE - 700 AREA SITE #2
163	RADIOACTIVE SITE - 700 AREA SITE #3
	163.1: WASH AREA
	163.2: BURIED SLAB
164	RADIOACTIVE SITE - 800 AREA SITE #2
	164.1: CONCRETE SLAB
	164.2: BUILDING 886 SPILLS
	164.3: BUILDING 889 STORAGE PAD
165	TRIANGLE AREA
166	TRENCHES
	166.1: TRENCH A
	166.2: TRENCH B
	166.3: TRENCH C
167	SPRAY FIELDS - THREE SITES
	167.1: NORTH AREA
	167.2: POND AREA
	167.3: SOUTH AREA
168	WEST SPRAY FIELD

TABLE FO.10-A1 (cont.)
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

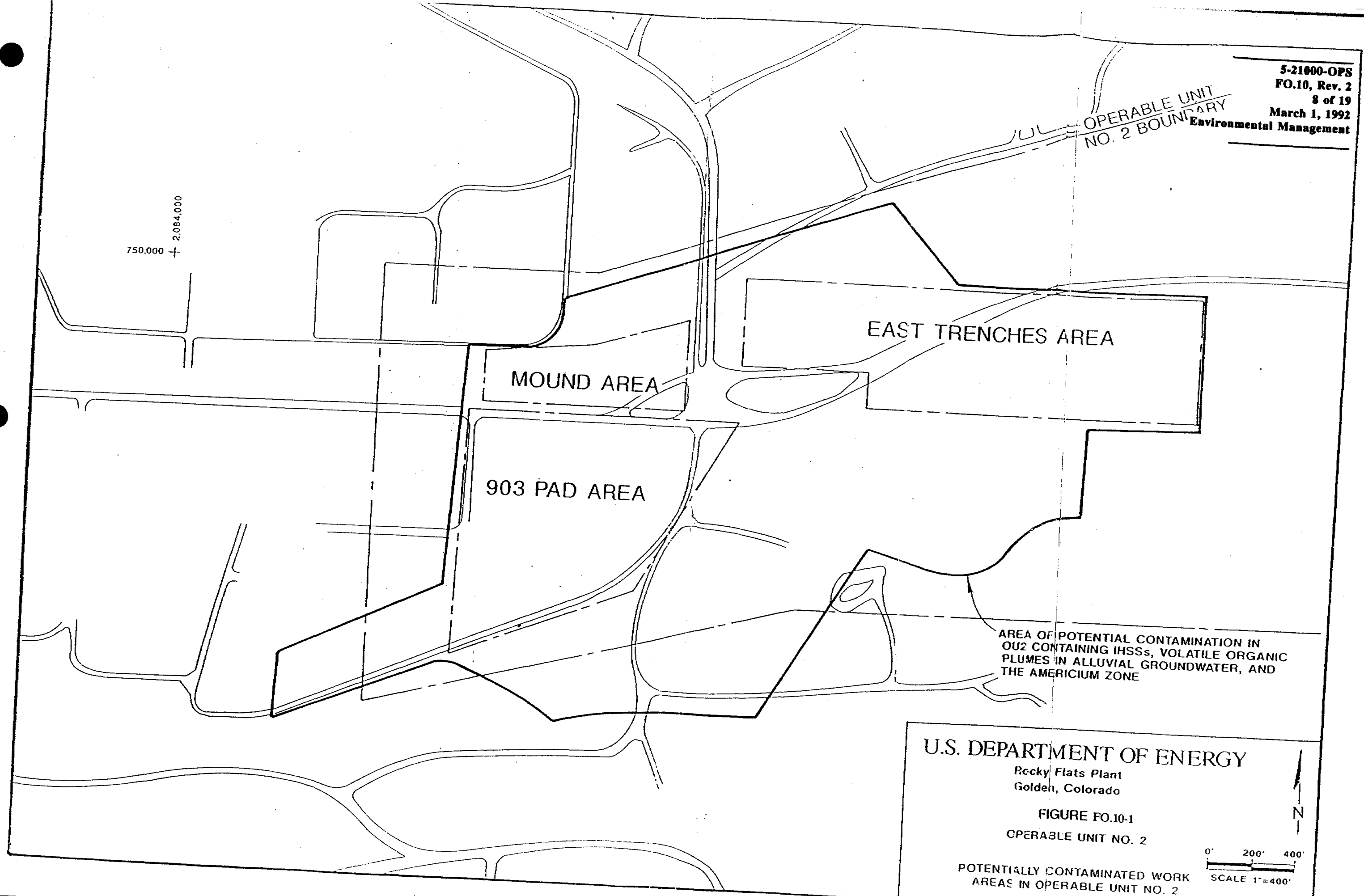
REF NO.	SITE NAME
169	WASTE DRUM PEROXIDE BURIAL
170	P.U.& D. STORAGE YARD - WASTE SPILLS
171	SOLVENT BURNING GROUND
172	CENTRAL AVENUE WASTE SPILL
173	RADIOACTIVE SITE - 900 AREA
174	P.U.&D. CONTAINER STORAGE FACILITIES (2)
175	S&W BLDG. 980 CONTAINER STORAGE FACILITY
176	S&W CONTRACTOR STORAGE YARD
177	BUILDING 885 DRUM STORAGE AREA
178	BUILDING 881 DRUM STORAGE AREA
179	BUILDING 865 DRUM STORAGE AREA
180	BUILDING 883 DRUM STORAGE AREA
181	BUILDING 334 CARGO CONTAINER AREA
182	BUILDING 444/453 DRUM STORAGE AREA
183	GAS DETOXIFICATION AREA
184	BUILDING 991 STEAM CLEANING AREA
185	SOLVENT SPILL
186	VALVE VAULT 12
187	ACID LEAKS (2)
188	ACID LEAK
189	MULTIPLE ACID SPILLS
190	CAUSTIC LEAK
191	HYDROGEN PEROXIDE SPILL
192	ANTIFREEZE DISCHARGE
193	STEAM CONDENSATE LEAK
194	STEAM CONDENSATE LEAK
195	NICKEL CARBONYL DISPOSAL
196	WATER TREATMENT PLANT BACKWASH POND
197	SCRAP METAL SITES
198	VOCs IN GROUND WATER
199	CONTAMINATION OF THE LAND SURFACE
200	GREAT WESTERN RESERVOIR
201	STANDLEY RESERVOIR
202	MOWER RESERVOIR
203	INACTIVE HAZARDOUS WASTE STORAGE AREA
204	ORIGINAL URANIUM CHIP ROASTER
205	BLDG. 460 SUMP 43 ACID SIDE
206	INACTIVE D-836 HAZARDOUS WASTE TANK
207	INACTIVE 444 ACID DUMPSTER
208	INACTIVE 444/447 WASTE STORAGE AREA
209	SURFACE DISTURBANCE SOUTHEAST OF BLDG. 881
210	UNIT 16, BUILDING 980 CARGO CONTAINER

TABLE FO.10-A1 (cont.)
INDIVIDUAL HAZARDOUS SUBSTANCE SITES

REF NO.	SITE NAME
211	UNIT 26, BUILDING 881 DRUM STORAGE
212	UNIT 63, BUILDING 371 DRUM STORAGE
213	UNIT 15, 904 PAD PONDCRETE STORAGE
214	UNIT 25, 750 PAD PONDCRETE AND SALTCRETE STORAGE
215	UNITS 55.13, 55.14, 55.15, 55.16 - TANKS T-40, T-66, T-67, T-68
216	EAST SPRAY FIELDS 216.1: NORTH AREA 216.2: CENTER AREA 216.3: SOUTH AREA
217	UNIT 32, BUILDING 881, CN- BENCH SCALE TREATMENT

FIGURE FO.10-A1 Location of RFP Individual Hazardous Substance Sites

control copies shall use existing map



U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

FIGURE FO.10-1

OPERABLE UNIT NO. 2

POTENTIALLY CONTAMINATED WORK AREAS IN OPERABLE UNIT NO. 2

N

0' 200' 400'
SCALE 1"=400'

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